

An Initiative to Improve Vaccine Management and Delivery

Background

The National Immunization Program (NIP) purchases and makes available over 60 million doses of pediatric vaccine to both public and private immunization providers each year. This accounts for almost 60% of the pediatric vaccines used in the country. The bulk of this vaccine is made available through the Vaccines for Children (VFC) program. This program provides federally-purchased vaccines to all children from birth through 18 years of age if they:

- Are enrolled in Medicaid; or
- Have no health insurance; or
- Are an American Indian or an Alaska Native

In addition, children who are insured but whose health insurance does not cover immunizations (“underinsured”) are eligible for VFC vaccines at Federally Qualified Health Centers (FQHC) or Rural Health Clinics (RHC).

The VFC program is a recognized success: raising provider enrollment in the VFC program, which in turn has led to increased access to affordable immunizations for eligible children and improved national immunization coverage levels. However, many of the vaccine management and accountability processes are still conducted using outdated methods established more than a decade ago. Most methods and processes used to manage vaccines are derived from models put into place with the inception of the VFC program 10 years ago, and some processes were first used as early as the 1960s. These processes include stand-alone computer applications, offline spreadsheets, and manual, paper-based records. There is no uniform process to manage and track vaccine inventories and no electronic or automated system to support the distribution, supply, and availability of vaccines.

In late 2003, as a result of direction from the President’s Management Agenda and mandates from the Department of Health and Human Services (DHHS), NIP began to take steps to improve the business aspects of its vaccine management system. Simultaneously, new requirements, such as implementation of a national pediatric vaccine stockpile and required changes in funding practices, forced NIP to re-examine its basic operating model for vaccine delivery and accountability.

Over the past decade, however, the number of children served and the number of doses of vaccine given to children have increased dramatically due, in large measure, to the number of vaccines that have been added to the list of recommended childhood vaccines since the inception of the VFC program in 1994. By the end of 1995, the first full year of the VFC program, just over \$343 million had been spent on vaccines. In comparison, by the end of 2004, the VFC program had spent over \$ 1 billion in vaccines. Because of the increased complexities in the program, the vaccine ordering, distribution and accountability processes that were adequate to manage the program in 1994 do not meet the public health needs of the 21st century. In an effort to address these concerns, the Vaccine Management Business Improvement Project was initiated in early 2004.

Goals

The goals of the Vaccine Management Business Improvement Project’s (VMBIP) are to:

1) Simplify processes for the ordering, distribution, and management of vaccines in order to be able to respond more quickly and effectively to public health crises related to disease outbreaks, vaccine shortages, and disruption of the vaccine supply.

- 2) Implement a more efficient vaccine supply system that will, in turn, result in the redirection of vital public health resources away from vaccine distribution and towards public health activities that will improve immunization coverage levels.
- 3) Significantly reduce the lead time between orders for vaccine and delivery of that vaccine and enable the direct delivery of vaccines to providers.

First Steps

The early part of 2004 was spent developing a baseline understanding of the entire vaccine supply chain, from vaccine manufacturers through to the immunization providers. A team, led by CDC staff assigned to coordinate this project, visited ten state and local immunization projects. They also visited all four of the vaccine manufacturers and two of the vaccine distributors that currently supply and distribute vaccine for the VFC program. With this information, the team was able to examine many aspects of the program, including vaccine funds management, vaccine distribution, vaccine ordering at the clinic level, inventory management, and the operation of the national pediatric stockpile.

In April 2004, the team presented its findings to CDC and NIP leadership. The recommendation was for a much more consolidated approach to ordering and distribution. This new model was a bold departure from the very fragmented and decentralized approach that is currently in place and would allow CDC to see where the vaccine is located in the supply chain – a very important advantage to professionals who are working to improve public health.

Since early fall 2004, the project has engaged over 70 staff from federal and state immunization programs. There are working teams for all major aspects of the program: Ordering and Distribution, Vaccine Stockpile, Systems, Fiscal Operations, Vaccine Management and Accountability, and Communications.

Over the past several months, the VMBIP team has shared its ideas with the many different groups that are involved in the vaccine program, including leadership within NIP, CDC, DHHS and the National Vaccine Program Office, partner organizations such as the Association of Immunization Managers, the Association of State and Territorial Health Officials, Every Child by Two, the National Association of County and City Health Officials, and the American Immunization Registry Association. Regular feedback through meetings, conference calls, and written documents is sought from Immunization Program Managers to help to provide a “reality check” on the team’s preliminary ideas and solicit feedback on how they can be improved. The team will continue to vet recommendations to, seek ideas from, and address concerns of all key stakeholders in this project.

Next Steps

The next step in the implementation process is to finalize the details of the new approach and pilot the approach, initially on a small scale in a few immunization projects. Once the team has thoroughly tested the processes in the first sites, the pilot would be expanded to other projects, initially to those that are already using commercial distributors, and then to those that are currently distributing vaccine via internal distribution systems. The expectation is to pilot elements of the new model starting in fall of 2005 and then roll out the system across the entire nation during 2006 and 2007.